SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

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THE SCIENTIFIC AMERICAN

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(The Principal Office being at New York,)

By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions' Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

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TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

Mrs. Tott.

The plump Lady Tott to her husband one day,
Said, "Let us go driving this evening, I pray."
(Lady Tott was an alderman's daughter,)
"Well, where shall we go?" said Sir Tillbury Tott.
"Why, my love," said my lady, "the weather is hot,
Suppose we drive round by the water—
The water—
Suppose we drive round by the water."

The dinner was ended, the claret was "done,"
The knight getting up—getting down was the sun—
And my lady agog for heart-slaughter:
When Sir Tilbury, lazy, like cows after grains,
Said, "The weather is low'ring, my love; see, it rains,
Only look at the drops in the water—
The water—
Only look at the drops in the water."

Lady Tott, who, when earnestly fixed on a drive,
Overcame all excuses Sir Til might contrive,
Had her bonnet and parasol brought her;
Says she, "Dear Sir Til, don't let *me* ask in vain;
The dots in the pond which you take to be rain,
Are nothing but flies in the water—
The water—
Are nothing but flies in the water."

Sir Tilbury saw that he could not escape;
So he put on his coat, with a three-doubled cape,
And then by the hand gently caught her;
And lifting her up to his one-horse "shay,"
She settled her "things," and the pair drove away.
And skirted the edge of the water—
The water—
And skirted the edge of the water.

Sir Til was quite right; on the top of his crown,
Like small shot in volleys, the rain peppered down—
Only small shot would do much more slaughter—
Till the gay Lady Tott, who was getting quite wet,
Said, "My dear Sir T. T." in a kind of half pet,
"Turn back, for I'm drench'd with rain water—
Rain water—
Turn back, for I'm drench'd with rain water."

"Oh, dear Lady T.," said Til, winking his eye,
"You everything know so much better than I;"
(For, when angry, with kindness he fought her,)
"You may fancy this rain, as I did before;
But you show'd me my folly; 'tis really no more
Than the skimming of flies in the water—
The water—
The skimming of flies in the water."

He drove her about for an hour or two,
Till her ladyship's clothes were completely soak'd thro,'
Then home to Tott Cottage he brought her;
And said, "Now, Lady T., by the joke of to-night,
I'll *reign* over you; for you'll own that I'm right,
And know rain, ma'am, from flies in the water—
The water—
Know rain, ma'am, from flies in the water."

The Toper's March.

AIR—"*Oft in the Stilly Night.*"

Oft in the licker shops
Long ere the work-house found me;
Old whiskey brought the hopes
Of future juleps round me.
The smiles and joys of them are boys,
The words of fun then spoken,
The wines that shone—now drank and gone,
And e'en the bottles broken!

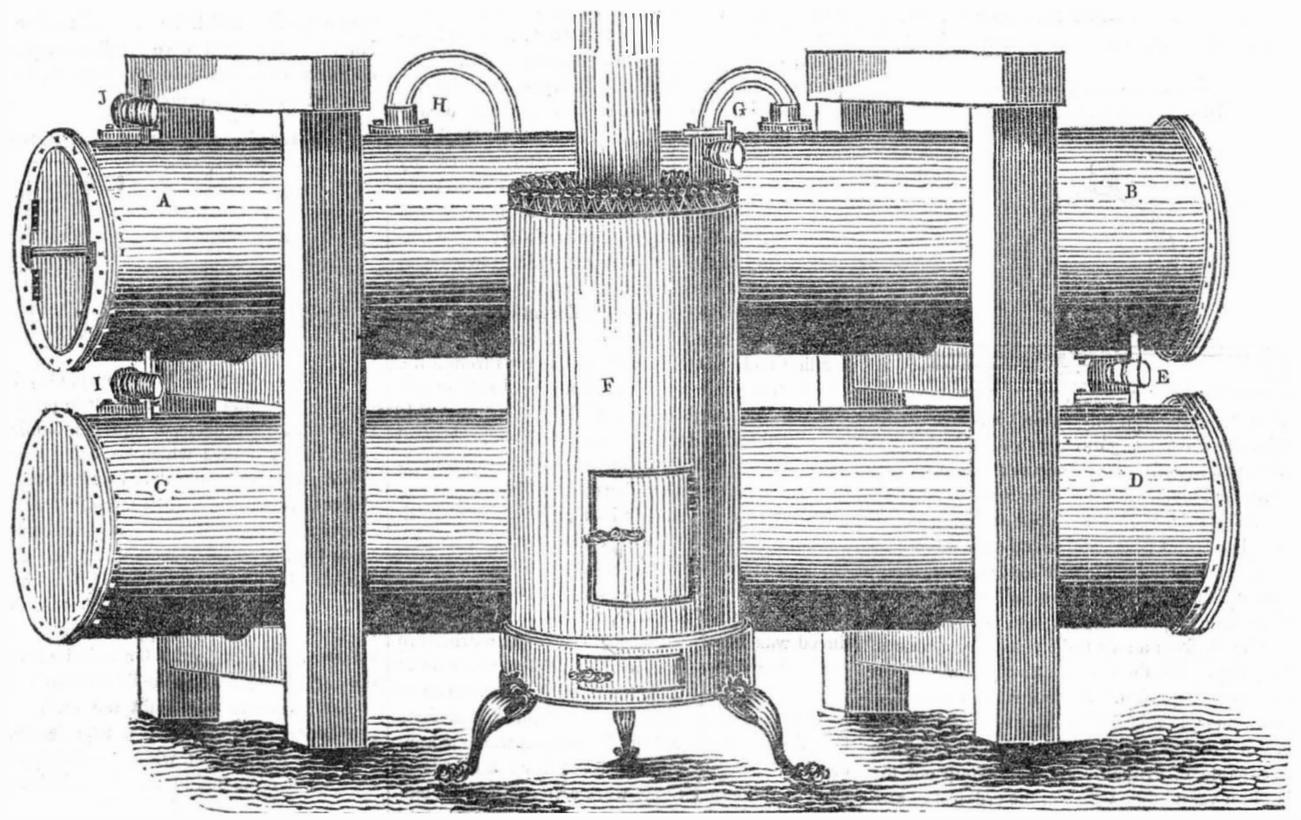
Thus, in the licker shops,
Long ere the work-house found me;
Old whiskey brought the hopes
Of gin-cock-tails around me.

When I remember all
The friends that drank together,
I've seen them round me fall,
Like sweat in sultry weather;
I feel like one who treads, alone,
Some coffee-house deserted,
Whose credit's dead—whose '*Sucker's*' fled,
And all for Tex-as started!

Thus in the licker shops
Long ere the work-house found me;
Old whiskey brought the hopes
Of future black-straps round me.

Some editors think themselves justified in publishing the most barefaced assertions, provided their foreman shows a *proof* of them.

APPARATUS FOR KYANIZING TIMBER.



INTRODUCTORY REMARKS.—We find no occasion for explaining the origin of the term "kyanizing;" it is sufficient to say that it is the term now commonly used to signify a pickling or saturating of anykind of wood with such saline solutions as tend to preserve the same from decomposition or decay. It has been known from the early ages, that wood is not liable to decay while either constantly or frequently subject to immersion in salt water; and the muriate of soda, or common sea-salt has been used from ancient times, as a preservative of both vegetable and animal substances. The preservative properties of Nitrate of Potash (salt petre) were found to be more effectual than the muriate of soda; and the discovery has been more recently made, that sulphate of iron, and other metalic salts, are also, if not more so, excellent preservatives of wood. With regard to the effect of the artificial application of those saline substances to timber, as a preservative; it is doubtful whether any person has ever made an experiment to see which preparation was the most effectual; but from recent accidental discoveries, it appears evident that the muriate, or murio-carbonate of ammonia is, of all other preservatives, the most perfect. For the ordinary preparation of timber for paving-blocks, railway ties, and other purposes, we have no hesitation in deciding that a solution of twenty parts of muriate of soda, with four parts of nitrate of potash, four parts of sulphate of iron, and one part sulphate of copper, when properly applied, will preserve any kind of wood so long, that no person engaged in applying it will ever hear any complaint of its want of durability. For the purpose of saturating timber with this or similar solutions, this apparatus has been invented, and will be found convenient and effective for that purpose.

EXPLANATION.—Two iron cylinders, A B and C D, twenty feet long and three feet in diameter, are placed in a horizontal position, the one immediately over the other, and secured in that position by means of posts and cross-beams, or by mason work. The cylinder A B has a large door at each end, for the purpose of receiving the timber to be kyanized: and a communication is made between the two by a large aperture, pipe and valve at E, from which the pipe descends nearly to the bottom of the cylinder C D, as represented by dotted lines. An upright steam-boiler, F, communicates with the upper cylinder by a pipe and valve, G; and another pipe from the valve H, on this cylinder, extends to a cask of cold water in the rear of these cylinders. The boiler being supplied with water and fire, the upper cylinder being filled with timber, and the other cylinder with the saline solution, the valves are closed and the doors secured; and when the steam is sufficiently raised in the boiler, it is allowed to escape to the upper cylinder, until the timber becomes heated under a pressure of about five pounds per square inch. This may require about twenty minutes: the steam is then shut off, and the valve H being opened, the steam rushes to the condensing cask, and a vacuum nearly perfect is thus formed in the cylinder, and the pores of the wood will have become open and free. The valve H is then closed, and the valves E and I are opened, by which means the atmospheric air will enter through the valve I, and by its pressure on the surface will force the solution through the pipe E up into the cylinder A B, quickly filling every pore thereof. A small valve, J, being then opened, the solution descends to the lower cylinder, when the doors may be opened and the timber removed. The process may be repeated on the same timber till every pore is filled solid with the compound salt; but one process will be sufficient for ordinary purposes. By this apparatus, two men will kyanize about 20 tons of timber day, and the expense of the saline matter (which must be kept saturated and replenished) will be merely trifling in comparison with its utility. For the right of using this apparatus application may be made at this office.

MANUFACTURES IN MASSACHUSETTS.—The following interesting statement of the manufactures of the Old Bay State is from the Boston Statesman:

Iron Manufactures in Massachusetts.—Under this head we include all manufactures of which iron is the principal and use-giving portion, but with regard to some branches it is only necessary to state the value of the articles produced. We have now 32 rolling, slitting and nail mills, which roll and slit 14,842 tons of iron per annum, and produce 37,102,400 pounds of nails—total value, $2,738,300: hands employed, 1729. The number of forges is 152, producing annually bar iron, anchors, chains, &c., to the amount of $538,966, and employing 422 hands. There are four furnaces for the manufacture of pig iron, which produce to the amount of $148,761, and employ 235 hands. For the value, number of factories, and hands employed in other branches of iron manufactures, see below:

	No. of Factories.	Value of annual productions.	Hands employed.
Hollow ware & castings	91	$1,280,141	1267
Machinery	114	2,022,648	2421
Steamengines & boilers	6	208,546	221
Scythes	20	113,935	171
Edge tools	35	94,441	94
Cutlery	14	148,175	198
Butts and hinges	5	25,390	49
Latches & door handles	4	3,200	10
Locks	11	60,070	75
Tacks and brads	26	253,687	269
Shovels, hoes, &c.	39	275,212	259
Ploughs, &c.	73	121,691	153
Railing, Safes, &c.	7	128,300	87

Total yearly value of iron manufactures, $8,162,463. Hands employed, 7664. Total capital invested in all manufactures of iron in Massachusetts, $5,000,000.

TOOTHACHE.—Put a piece of lime, about the size of a walnut, into a quart bottle of water: with this rinse the mouth two or three times a day, and clean the teeth, using this water every morning. If it taste strong, dilute it; for it should be just strong enough to taste the lime, and no stronger.

A certain popular *club* in this city is said to consist of a great number of *sticks* in close comb

IMPORTANT SCIENTIFIC DISCOVERY.—Magnetism which has puzzled the scientific world so long, is slowly developing itself, but each new discovery seems only calculated to excite more intense interest in the investigation. A few months ago professor Faraday discovered a re-action between light and electricity, which created as great a sensation in the scientific world as the discovery of the influences of galvanism did among the Medical profession. Faraday, in continuing his experiments, discovered, last January or February, a new magnetic principle, which he calls "diamagnetism," because bodies influenced by it or containing it (as bismuth, phosphorus, water, &c.) place themselves at right angles to those (iron, nickle, &c.) which contain the magnetic principle. That is, the diamagnetic current moves across the magnetic current. For example, needles made of gold, zinc, tin, lead, or flint glass, delicately suspended between the poles of a powerful electro magnet, will arrange themselves at right angles with the line connecting the poles; while needles made of iron, nickle, cobalt, platinum, or osmium, suspended alongside of them, will arrange themselves in conformity with the poles of the magnet. A curious property of the diamagnetics is, that they possess no polarity; two needles diamagnetically excited, exercising no alteration or repulsion over each other. He ascribes all the phenomena of diamagnetics to the principle that all of their particles exercise a repulsion for the poles of the magnetic.

CURIOUS RAILWAY COURTSHIP.—A short time ago a young lady out of her teens, was travelling in a first-class railway car from London to Birmingham. There was but one other passenger, a gentleman, who became very agreeable by conversing politely on various subjects. Before the arrival of the train at Birmingham the gentleman displayed such interest in the fair damsel's welfare that he outstepped the bounds of decorum, and stole a kiss from her rosated cheek. This liberty gave such offence, that at Birmingham our gentleman was given into the custody of an officer. A scene in the police court followed—a fine was imposed and paid. By this police procedure he learned the name and connexions of the fair maiden; adopted means to be introduced *comme il faut*, plied his suit, was accepted, and the couple were soon joined together in ly bonds of matrimony.

VOLCANOES.—There are about 200 volcanoes in the known world about 20 of which have eruptions every year. There are three that are constantly in a state of eruption, viz: Stromboli, one of the Lipari Islands, in the Mediterranean Archipelago; Devilsmouth, at the mouth of Lake Nicaraugua in Guatamala, and one on the island of Bourbon, in the Indian Ocean. Stromboli it is known has been in action 2000 years. There is one thing remarkable about this volcano: lava seldom overflows its crater, but burning rocks are often ejected from it, and a loud explosion is heard every seven or eight minutes. Of the 200 volcanoes in the world, there is but one on the continent of Europe (Mt. Vesuvius;) there are 12 on the islands belonging to Europe: 8 on the continent of Asia, 97 on the continent of America, and 19 on the islands of America. The report of an eruption of a volcano in Tomboro, in Sumbawa, in the Indian Ocean, was heard 970 miles. Of all the surrounding villages but one escaped from the general ruin, and only 26 out of 15,000 inhabitants were saved. At the distance of 40 miles, ashes fell with such force as to break through the roofs of the houses. Mount Etna in Sicily, is 10,000 feet high, and 180 miles in circumference. By one eruption of this volcano, fifteen towns and villages were destroyed. Lava flowed over the walls of Cantania, sixty feet high.

PLANE STORY.—A planer of planes was once planing a plane, whenth e plane which he was planing was plainly discovered not to be plane, but so uneven and rough that he could never make plain what was made for a plane. The planer of planes then complained with plaintive complaints that his neighbor, to whom he had some time before loaned his plane, had misused his plane and made it unplain. This plainly appeared not to be plain-dealing in his neighbor, who, had he been a plain upright man, would have plainly told him when he returned the plane to the planer of planes, that he had accidentally injured the plane while planing something that he wished to make plain. It now appearing plain to the planer of planes, that the plane with which he had been planing what he intended for a plane would never make it plain; he took another plane he had been using to plane out the new plane; and, after plaining that plain, he was able smoothly to plane the new plane.

Glossary of Mechanical Terms.

(Continued from No. 30.)

FAN—Small vanes or sails to receive the impulse of the wind, and, by connection with machinery, to keep the large sails of a smock wind-mill always in the direction of the wind: an instrument to winnow corn; also to decrease speed by its action on the air.

FILE—A tool used by smiths for the abrasion of metals, denominated, according to its fineness, rough, bastard, or smooth.

FIRST-MOVER—Power either natural or artificial.

FLANCH—An edge or projection for the better connection of piping or castings of any description.

FLANK OF THE TOOTH—The straight part of a tooth which receives impulses from another wheel.

FLOAT—The board which receives the impulse of the water either in breast or undershot-wheels.

FLAX—Ingredients put into a smelting furnace to fuse the ore of metals.

FLY-WHEEL—A heavy wheel to maintain equable motion.

FOOT-BRAKE—A machine used in the flax manufacture.

FORGE—A manufactory in which metals are made malleable: a furnace.

FORGE—To form by the hammer.

FRICTION—Inequality of surface: act of rubbing together.

FRISKET—An iron frame used in printing to keep the sheet of paper on the tympan, and to prevent the margin from being blackened.

FULCRUM—The point or bar on which a lever rests.

GEERING—Part of mill work.

GIBBET—That part of a crane which sustains the weight of goods.

GIG-MILL—A mill in which the nap of woollen cloth is raised by the application of teasels.

GIRDER—The largest timber in a floor.

GIRT—*Vide* Gripe.

GRAVITY—Tendency towards the centre of the earth: weight.

GRIPE—A pliable lever which can be pressed against a wheel to retard or stop its motion by friction.

GOVERNOR—A pair of heavy balls connected with machinery to regulate the speed on the principle of central force.

GUDGEON—The centres or pivots of a water-wheel.

HALF-STUFF—This term, in general, implies any thing half-formed in the process of the manufacture.

HEALD OR HEDDLE—*Vide* Heddle.

HECKLE—A metal comb for the manufacture of flax.

HEDDLE—That portion of a loom which imparts motion to the warp of a web during the process of manufacture.

HELVE—The shaft of a forge or tilt-hammer.

HOPPER—A tunnel in which grain is deposited, whence it runs between the stones of a flour-mill.

HOROLOGY—The art of constructing machines for measuring time.

HYDRAULICS—The science which treats of the motion of fluids, of the resistance which they oppose to moving bodies, and of the various machines in which fluids are the principal agent.

HYDRODYNAMICS—The science which embraces the phenomena exhibited by water and other fluids, whether they be at rest or in motion: it is generally divided into two heads, hydrostatics and hydraulics.

HYDROSTATICS—The science which considers the pressure, equilibrium, and cohesion of fluids.

IMPACT—Transmission of force.

IMPINGE—To dash against.

INERTIA—That tendency which every piece of matter has, when at rest, to remain at rest; and when in motion, to continue that motion.

IN VACUO—Empty space, void.

ISOCHRONA—Of equal duration.

ISOCHRONUS—The vibrations of a pendulum.

JENNEY—A machine used in the process of the cotton manufacture.

JIB—*Fide* Gibbet.

KILN—A place where bricks are burned.

KINK OR KINKLE—The entangling of cordage from overtwisting.

LATERAL—A horizontal or lengthwise movement.

LATHE—Machine used by turners.

LANTERN—A wheel with staff-teeth; the trundle or wallower.

LEAVES—The teeth of a pinion.

LEVER—One of the mechanical powers.

LINE OF CENTRES—A line drawn from the centre of one wheel to the centre of another, when their circumferences touch each other.

(To be continued.)

STATE'S EVIDENCE.—A good story is told of George White, a notorious thief, in Worcester County, Massachustts. He was once arraigned for horse stealing, and was supposed to be connected with an extensive gang which were laying contributions on the stables round about. Many inducements were held out to White to reveal the names of his associates, but he maintained a dogged silence. An assurance from the court was at last obtained, that he should be discharged upon his revealing, under oath, all he knew of his accomplices. The Jury were accordingly suffered to bring in a verdict of "not guilty," when he was called upon for the promised revelations. "I shall be faithful to my word," said he; "understand, then, the devil is, the only accomplice I ever had; we have been a great while in partnership: you have accquitted me and you may hang him—if you can catch him!"

DUTCH AUCTION.—It is the invariable practice throughout Holland. to bid *down*, instead of *up*, at an auction. An article is set up at any price the auctioneer pleases—if nobody bids, he lowers until some person cries "Mine!" and that person, who so claims it, is then entitled to it; a practice congenial to Dutch taciturnity.

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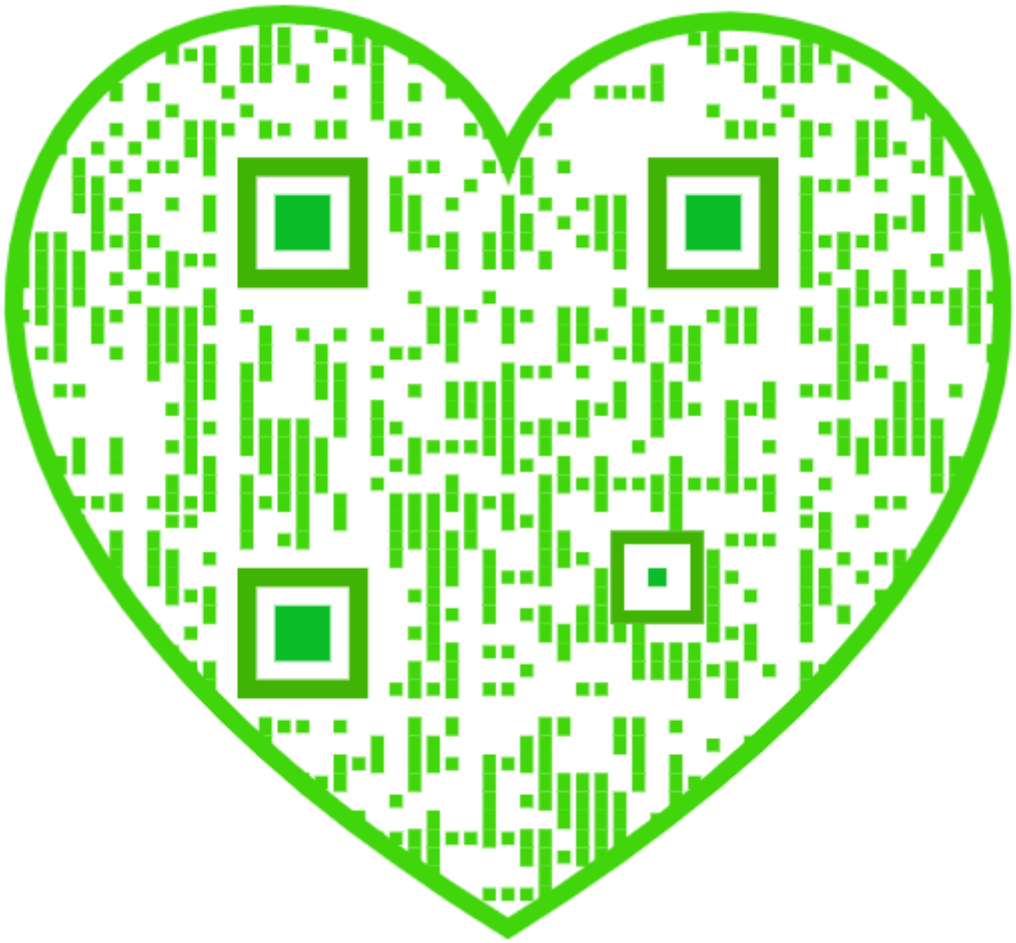
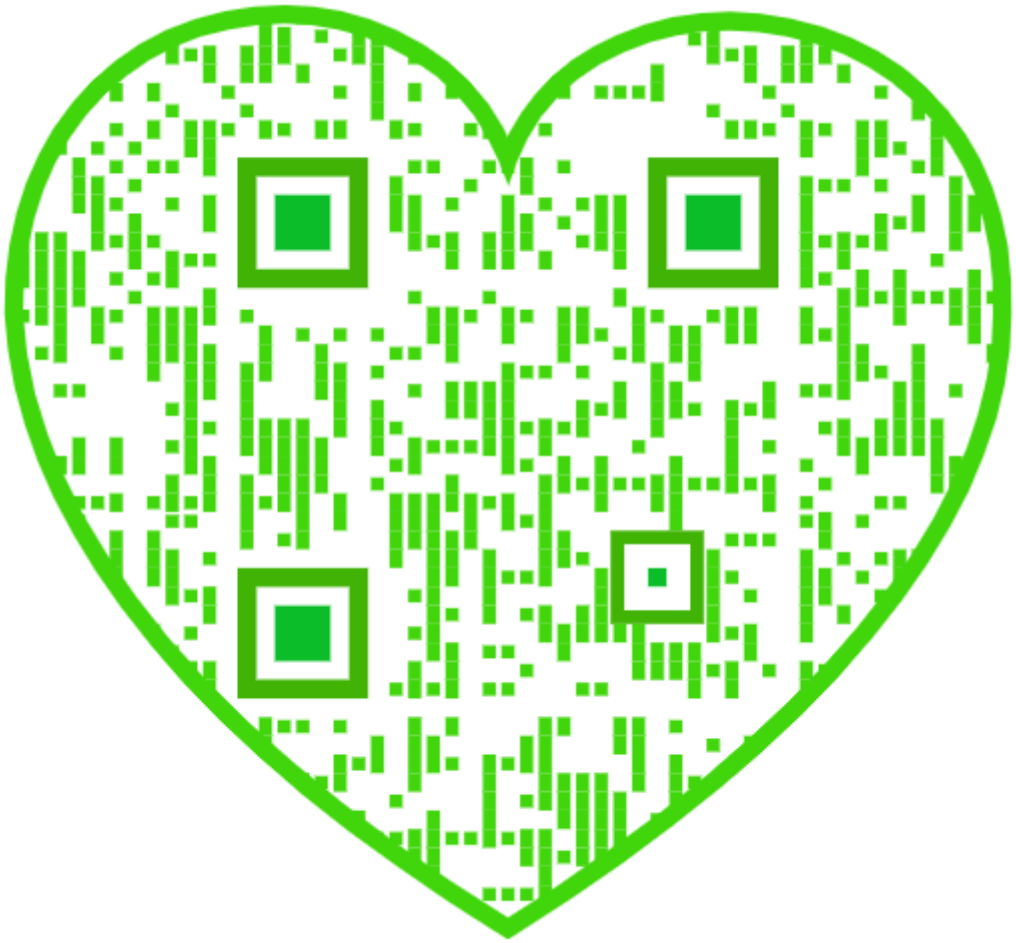




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, APRIL 23.

Those of our city subscribers who intend removing on the 1st of May, are requested to give notice thereof, beforehand, to the carriers, that there may be no confusion on that account.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics.

Drawings of machinery, engraving on wood, and lithographic drawings, neatly executed, at the lowest prices, at this office.

MODERN JUSTICE.—We commend the independent editor of the Albany Knickerbocker, for his bold and fearless manner of exposing knavery, even in the higher circles, and among those who, having been promoted to high judicial and civil offices, assume the right to follow their own interest or caprice, without regard to either law or justice. In allusion to the rich rascal who was sometime since arrested on a charge of abduction and murder, he says, "He will unquestionably get clear; but for the looks of the thing, we did hope they would go through with the motions [form of trial] if nothing more. As he runs no risk whatever, we dare say the prisoner himself would have no objections to their getting up the farce for the benefit of the neighborhood, as well as the publishers of gallows literature "generally." He should remember that no man has ever done wrong in this State, whose income was over $10,000 a year. In proof of which we appeal to all the jurors and official records in the land. Queer, is'nt it?" It is an incontrovertible fact, which has become notorious, that the lawyers and judges of not only this, but several other States, by their powerful influence in the State Legislatures, have got the laws so cobwebbed and complicated, that whatever may be a man's guilt; however heinous his crime, or positive the evidence thereof, if he has but plenty of money, they will contrive some loop or kink whereby he will be sure to escape punishment. And while the working classes will suffer themselves to be tacitly led by the nose by the fiery political party leaders, under the delusive but senseless cry of Whig and Democrat, and elect lawyers to represent them, these abuses will never be corrected.

OUR KIND CORRESPONDENTS.—It is not unfrequently the case that our correspondents, not receiving our answers so promptly as they had anticipated, conclude that their letters have not been received, or that we had overlooked or forgotten them, and write a second before we find opportunity to answer the first. But we can assure them that their letters are not disregarded: but on account of a press of those peculiar branches of business, which neither our clerks, artists, nor other persons but ourselves, can attend to,—examining new inventions: giving advice and instructions about patents: writing specifications of machinery, and giving directions to artists concerning drawings and engravings thereof: superintending the construction of new machinery; examining American and foreign scientific journals, and writing all the scientific and other matter for this paper;—it is impossible to give, at all times, so early attention and answers to the favors of correspondents as we should be glad to do. We shall, in general, attend to this department as often as once a week, and shall endeavor to do justice to all in good time.

FAVORS OF THE PRESS.—Our kind-hearted and good-natured cotemporaries, continue to load us with obligations of gratitude by their more than complimentary notices of this paper. We have often felt strong inclinations to reciprocate; but the difficulty is, that among so many excellent papers, as we find daily or weekly on our table, we neither know where to begin, nor how to find language to express their relative merits, or points of excellence, without too much repetition for eloquence. We shall probably commence some brief notices, alphabetically arranged, however, in a few weeks, and continue the same through several successive numbers.

THE STEAMER OREGON.—We recently published a description of this splendid vessel, which was then proudly ploughing the Long Island Sound. But with sincere regret we have now to report her broken on the treacherous rocks of Hurl Gate. It was about four o'clock on Saturday morning last, when coming down with from 200 to 300 passengers, a large portion of them ladies, and far ahead of all the other boats, she fell into a violent current, which forced her on to the Gridiron rocks, where she remains, badly broken and in danger of becoming a total wreck. The passengers were immediately taken off by the Astoria Ferryboat, and soon after transferred to the steamer Traveller, of New Haven, and arrived in the city in safety. The baggage and furniture were also saved. The Oregon was insured for $90,000.

OUR TITLE.—We observe that several of our cotemporaries credit selections from this paper to the "New York Farmer," "N. Y. Mechanic," and N. Y. American." We do not complain of a neglect of credit, but to see our articles accredited to other city papers is rather unpleasant.

MAGNETIC TELEGRAPH.—The line between Philadelphia and Wilmington, Del., has been recently opened, with iron wire conductors. It is reported to work as perfectly as copper. The introduction of iron will effect an important saving of expense.

THE LAND OF SNOWS.—The Southern border of the disputed territory in Oregon, is more than a hundred miles further north than Quebec, in Canada. Of course its acquisition can be of little importance to either government.

Foreign News.

The Royal Steamship Unicorn arrived at Boston on Friday afternoon, bringing intelligence eight days later from England. The political news appears rather pacific than otherwise. There has been another desperate attempt to revolutionize a part of Poland; but the insurgents were likely to be immediately overpowered by the Austrian troops.

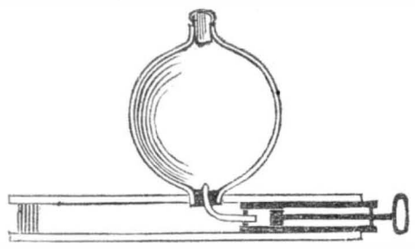
Sixteen Days Later.—The Royal Mail Steamer Caledonia arrived at Boston on Monday evening, sixteen days from Liverpool, bringing dates up to the 4th inst. Some of the war-advocates begin to lower their tone, and speak of the worthlessness of Oregon (as well they may.) Cargoes of Indian corn are daily reaching the British ports, and johnny-cakes are becoming much in vogue. These will keep the people good-natured, of course. German emigration is generally checked by the rumors of the Oregon war; so that the proceeds of sales of our public lands will be curtailed. The second reading of the new Tariff Bill was carried by a majority of 88. There is a serious degree of stagnation of business throughout the country.

SPAIN, is represented to be in an agitated and wretched state.

FROM INDIA.—Two considerable battles had been fought between the British forces in India, and the native Sikhs, which resulted in favor of the former, though with the loss of 320 killed, and 2,062 wounded. The loss of the Sikhs is estimated at 12,000 men.

Science of Mechanics.

(Continued from No. 31.)



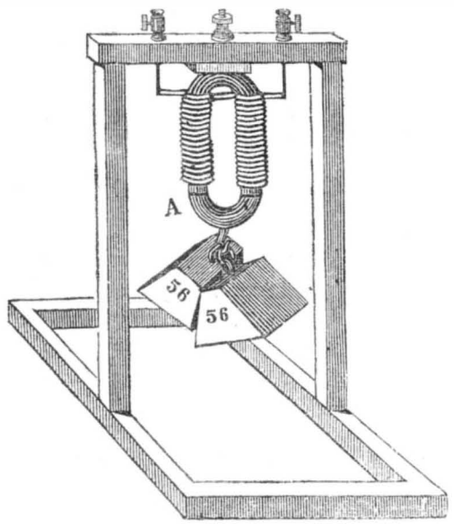
VACUUM.—Although this subject is not generally considered as belonging directly to the Mechanical Science, yet, it so frequently occurs that the success of a practical mechanic depends much on a knowledge of this subject, that we shall explain some of its most important peculiarities and effects. Vacuum is understood to be a *total absence of everything*, —a space full of, or consisting of nothing. The usual method of producing it, is to extract the atmospheric air from an air-tight vessel, by means of an air-pump. But the vaccum thus produced, is at best but very imperfect. A more certain and effectual method is, to first fill the vessel—a glass globe for instance—with mercury, or with boiled oil, which is not capable of evaporation; then pump out the fluid. In a vessel thus vacated, the order of nature is apparently changed, with regard to many articles that may be placed in it. The lightest feather will fall from the top to the bottom with the same rapidity as a leaden ball. Some kinds of liquids being placed in it, will boil spontaneously, without heat. Ice being placed in it will crack to pieces, by the expansive force of the air which it contains. Any live animal immediately swells and expires. A bell placed in it, cannot be made to ring, although struck with a hammer. Water will evaporate rapidly, even without heat; and proportionably more so, being heated. On this account, a partial vacuum being maintained by air pumps kept in constant operation, has been recently introduced, and is employed to facilitate evaporation in the manufacture of sugar, and in producing the crystallization of neutral salts. Hydrogen, carbonic and other gases, may be produced with double the facility in vacum, that can be done in the open air. A burning candle being placed in vacum, becomes extinguished as suddenly as if it were plunged in water. A ready method of producing vacuum for business purposes, is to expel atmospheric air from a large iron cylinder, by a column of steam; and then condensing the steam by conducting it into cold water, in a manner similar to that of the original steam engine. In this way, by a suitable arrangement of different cylinders, more than twenty times the quantity of vacuum may be produced in proportion to the quantity of fuel used, that can be done by employing steam to drive or operate air-pumps for this purpose. Timber of any kind, fruit or other articles may be much more rapidly and effectually dried and seasoned in vacuum, than in air; paintings and varnishes will more readily dry or consolidate in it; and we cannot but believe it will in a short time be employed for a variety of purposes, in which its application has not been hitherto contemplated. One of the most remarkable effects produced by vacuum, is the production of ice by freezing water. It is an established fact, though not until recently discovered, that water will boil, in perfect vacuum at any temperature below the freezing point. And as it is among the well-known laws of nature, that water is invariably deprived of its caloric by evaporation, it will be readily understood that while a perfect vacuum is maintained, water which is placed therein must rapidly become cold till it becomes solid ice. In some instances, we have in this way produced ice in less than twenty seconds of time, by means of a nicely made air-pump. A rotary exhausting pump has been invented expressly for the purpose of producing ice per quantity in warm climates, for common use; and although not yet completed and proved by operation, we shall procure and present our readers with an engraving thereof in a few days, with full explanations of the principles of its operation and effect.

(To be continued.)

RICH MINES.—Much is said in the Northwestern papers, concerning the splendid fortunes made by the fortunate proprietors of several new discovered mines in the region of Lake Superior. One man gets out pure silver in lumps of thousands of dollars worth, while others have struck on beds of pure copper, ever so many inches thick, and extending in every direction "nobody knows how far," if not farther.

Galvanism.

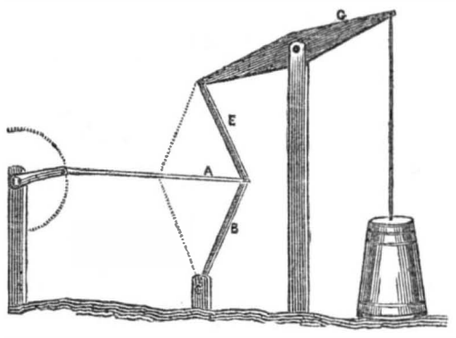
Continued from No. 31.



LIFTING POWER OF ELECTRO MAGNETS.—We have, in former numbers, described the construction of the electro U-magnet, having a helix of conducting copper wire coiled on each prong: and in No. 31, we illustrated the attractive property communicated to a bent bar of soft iron, by means of the magic ring. It will be readily understood that if a magic ring, or especially a full-sized helix be placed on each prong, the magnetic attractive power will be much greater. Professor Henry appears to have been the first to construct electro magnets of any great lifting power. In one instance he employed a soft iron bar, two inches in diameter, and twenty inches long, bent into the U form; and wound upon the prongs thereof, five hundred and forty feet of copper wire in nine separate coils of sixty feet each; each strand of the wire occupying about two inches of the bar. By this arrangement, the different coils could be combined in several different ways. Thus, if the second end of the first wire was soldered to the first end of the second, and so on through the series, the whole would form a single coil of 540 feet. Or they might be so united as to form a double coil of 270 feet; or a triple coil of 180 feet. A small battery was used, consisting of two concentric cylinders of copper, with a zinc cylinder between them. The battery required only half a pint of diluted sulphuric acid for its charge, and the surface of zinc exposed to the action of the acid, was but two-fifths of a square foot. The experiment was made with a single strand of this wire, and the magnetism produced was barely sufficient to sustain an armature of about seven pounds weight. When the ends of all the strands were united to each other, so as to form a continuous length of five hundred and forty feet, the weight raised by the magnet was one hundred and forty-five pounds: but when the ends of each of the nine strands were connected to the battery, the magnet supported the extraordinary weight of six hundred and fifty pounds. He afterwards constructed another electro magnet on a similar plan, which was wound with twenty-six strands of copper-wire, the aggregate length of which was 728 feet; and with a battery of forty-eight square feet of surface, this magnet supported two thousand and sixty-three (2063) pounds! The cut at the head of this article, represents an electro magnet, fixed in a frame, for the purpose of supporting heavy weights. The semi-circular armature A being adjusted to the poles of the magnet, is the best form for accommodating the lifting power. It will be understood that the wire of the helices must be insulated by being wound with cotton thread, and coated with a solution of shellac, to prevent one part of the wire from coming in contact with another part: and that the magnet is made of the softest iron. If the connection with the battery is broken while the armature is in contact with the magnet, the adhesive power will continue in considerable force: but when once the armature is removed the attraction ceases till the connection with the battery is renewed.

(To be continued.)

Mechanical Movement.



EXPLANATION.—By this diagram, (the plan of which was furnished us by Mr. P. Merchant, of Guilford, Ct.) is shown a method of producing two several vibrations in each direction, by one revolution of a journal and crank. In this instance, the motion is applied to a churn, but will apply equally well to a saw or other article, which requires a vibratory or oscillating motion. A crank 1 is connected by a pitman, A, to a pair of toggle levers, B E, the head of which is connected to one end of the balance beam, G, the opposite end of which operates the dasher-staff of the churn. The extent of the opposite motion of the toggle levers, is shown by dotted lines. It is obvious that this principle of multiplying the vibratory motion, may be carried to an unlimited extent: for, were the head of the toggle lever applied to the joint of another pair of toggles horizontally arranged, four vibrations instead of two would be produced; and these last being applied to another vertical pair, the vibrations would be eight, to each revolution of the crank. The extent of motion must be diminished, however, with each additional pair of toggles, and this mode of multiplying may not often be advantageously applied.

A GREAT BOOT-MAKER.—Mr. Thomas Starkie, of Cincinnati, makes thirty-six pairs of boots per week; and will engage to make a pair, in workman-like manner, in one hour. Go it boots.

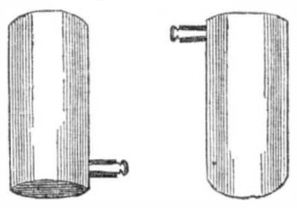
New Inventions.

NEW MODE OF TANNING.—We have recently seen severel statements concerning a new process of tanning, by Dr. Turnbull, of London; by which process he is able to tan an ox-hide in 14 days. We wish the Doctor much success, and ample reward for his ingenuity; but we can not understand wherein his process excels that of one of our citizens, a sample of whose work we have now before us. It is to all appearance as firm a piece of heavy sole-leather as we have ever seen, and is stated to have been tanned in less than ten days. We may obtain permission to publish the process.

NEW MOVING POWER.—We learn by the last arrival, that a new machine has been invented by a Mr. Trembly, of France, who employs for producing a rotary motion, two combined engines: the first moved by the steam of water, and the second by the steam of ether, which he manages to use without waste or consumption. He claims a saving of 50 per cent in fuel, as no additional heat is required to work the ether engine. This improvement appears quite rational, and highly important. It has been examined and approved by a commission of the French Institute.

SYPHONIC ENGINE.—We have received from Mr. Thomas H. Dodge, of Nashua, N. H., a description of a very ingenious and truly scientic invention for water power, which he denominates a Syphonic Engine. We shall give a full description of this engine as soon as we can conveniently procure suitable engraved illustrations.

Jeffrey's Improved Acid Bottles.



Mr. J. F. Jeffery of Waterbury, Ct., informs us that he has found it very difficult to preserve either nitric or muriatic acids, or liquid ammonia, in a pure state, in any bottles which he could procure; and that consequently he ordered some bottles of peculiar construction, at a glass manufactory, and which have fully answered his expectation, and preserve those liquids pure and without waste. A representation of his improved bottles appears in the above cut. The first figure shows the bottle in its ordinary position, with the stopper at the bottom. The second figure shows the bottle in its inverted position, as it is held when the liquid is to be poured in or out. We can not doubt the utility of the improvement, having ourselves experienced some difficulty on this subject, which we doubt not, may be completely remedied by this singular invention.

A CURIOUS COINCIDENCE.—Our friend Hastings, of the Albany Knickerbocker, relates that on Wednesday week, in attempting to pass from the Jonas C. Heart steamboat to the Hendrik Hudson, while the *plank* was being hauled on board he was precipitated into the water, and came near passing under the wheel: but fortunately for himself and the community, he escaped. On the same morning, and at about the same time, *we* attempted to pass from the wharf to the New Haven steamboat, after the plank was hauled on shore and the boat shoved off (though three minutes before the regular time, according to old Beekman) we approached the "jumping off place," and bounded about six feet to the boat, planting our soles upon the gunwale, which being sheathed with copper-plate, and, at the time, very slippery, we—yes, we just walked up to the Captain's office to settle our fare.

RELATIVE VALUE OF FUEL IN EVAPORATING WATER.—The following statement from the National Intelligencer will prove interesting and highly useful to those who deal in steam power:

Various combustibles.	Lbs. of water which a pound can raise from 32 to 212 degs.	Lbs. of water evaporated by one pound.
Common wood,	25.00	4.50
Dry wood,	35.00	6.36
Alcohol,	52.00	9.56
Bituminous coal,	60.00	10.00
Coke,	65.00	11.80
Anthracite,	65.00	12.00
Charcoal,	73.00	13.27
Coal gas,	76.00	13.81
Oil and tallow,	78.00	14.18

It must of course be understood that much depends on the mode of application of the heat produced. It is worthy of observation that the gas produced from coal is much more effective than the coal itself, which might justify an effort to construct a furnace that would convert most of the coal into gas prior to its combustion. The anthracite coal, burnt under an atmospheric pressure, and with an arrangement to keep the coal free from ashes, is evidently the cheapest fuel for the production of power that can be used.

IRON CASTINGS.—The demand for this article in Philadelphia, for building purposes alone must be very great, when it is considered that one improvement in that city, the building now in process of erection at the corner of Sixth and Chestnut streets, will require upwards of 75 tons.

CONTENTMENT.—An old lady who had been usually peevish and dissatisfied, suddenly became calm and serene, and gave as a reason therefor, that she had long been seeking a contented mind; but not having succeeded, she had concluded to sit down contented without one.

AN ESCAPE.—While two young men were lately riding in a light wagon through a small woodland, near Westchester, Pa., a large tree fell directly across their horse's back, killing him instantly. The young men escaped uninjured.

ADROIT THEFT.—The St. Louis American relates that a man having hauled a nice log to a saw-mill, sat astride of it all night to prevent its being stolen: but falling asleep, the thieves stole away the wood of the log, leaving the owner sitting on the bark.

VARIETY

There is said to be a river in Peru which flows by a great current by day, but is entirely dry at night, whence it is called the diurnal or day river. It is produced by the sun shining on the snowy mountains.

Mr. David Fender, a bright youth of 18, thus concluded a love letter to his intended: "And should you say yes, dear Mary, I will ever be truly your D. Fender.

The Mechanic Apprentice's Library Association of Boston, publishes a monthly magazine, edited and printed wholly by apprentices of the Association, and the work is highly spoken of.

One hundred and eighty-two heavy iron rails were made in twelve hours, by one set of hands at the Montour Iron Works, about two weeks since. 100 of them were made in six hours.

There has been a brisk passenger business on the Hudson river for two or three weeks past. For several days the arrivals by steamboats from Albany have been upwards of one thousand per day.

There are said to be about twenty Protestant Christian congregations in Constantinople, where fourteen years ago there was only one, and that consisting of less than twenty persons.

There is said to be quite a rage for vineyards and choice vines among the agriculturists of the Ohio river. We are glad to learn that this fruit is receiving due attention.

The income of the English Wesleyan Missionary Society, for the year 1845, was $580,000. The contributors expect them to make a good use of the money.

Front street, in Cincinnati, is nearly seven miles in length, and thickly settled on both sides nearly the whole distance. This is said to be the longest street in the world, excepting two in London.

It is reported that the steamer Hendrick Hudson is to take the place of the Oregon on the Stonington line. The fare from New York to Boston has been reduced to $2.50. Cheap enough.

A gentleman employed in distributing bibles in Georgia, reports having found among the mountains 52 families who were destitute of the Bible, and 16 in which no person could read or write.

Prof. Mitchel, at the Cincinnati Observatory, has discovered several double and multiple stars, and has expressed a hope of finding others. How much he makes on them, we are not informed.

A large business has been doing of late, in picking up lumber in the Penobscot Bay. One man has collected a raft worth $15,000, and others perhaps are equally successful.

The word *plow* is being adopted, and coming into general use, instead of *plough*, in the Agricultural papers. This is as it should be, and a few other *oughs* will be shaken out of our language soon.

It has been decided by certain popular engineers, that there is no disadvantage in having inclinations in railroads, provided the trains can safely run over them without using the brake.

An evening train runs between Albany and Boston, conveying passengers for the low fare of three dollars through. The company will evidently derive advantage from this move.

A rather severe shock of an earthquake was experienced at Cuba, on the 23 ult., which continued several minutes. The earth was shaken and several buildings thrown down.

Our Minister to Mexico, Mr. Slidell, has been finally rejected, and has returned. Santa Ana is said to have been recalled to take part in the squabbles of Mexico. The Mexicans are much perplexed.

A man has been sentenced to two months imprisonment, and $50 fine, for kissing a lady in public, during a military parade, in Hagerstown, Md. It will learn him better.

In the Massachusetts Legislature they have adopted a rule to restrict the speeches of members to fifteen minutes in length. That is ten minutes too long.

A Cincinnati paper states that there are upwards of forty rafts of pine timber within two miles of the mouth of the Miamee river, waiting for a favorable opportunity to go into mar

The bill for extending jurisdiction over Oregon was passed in the House of Representatives, by a majority of 103 to 64.

It is stated that the Seminoles are well pleased with their present residence in Arkansas, and are clearing large farms for cultivation.

The miners at Eagle River Bluffs, Wis., not long since, raised, in a single day, ten barrels of silver ore,—worth $1000 per barrel. So they say.

Where is Michael Kelly? Has his sister found him yet? If not, let him be after finding her, or stay where she can find him.

William Burnett, the pilot of the ill-fated steamboat Swallow, has been tried and acquitted. That is about right.

Two ladies in Washington parish, La., have recently added *six* to the population of that State, and all doing well.

The established price—probably for the season—of steamboat fares between this city and Albany, is 25 cents. One boat, however, carries for nothing.

Massachusetts has 89 paper-mills, employing 1350 hands, and producing 607,175 reams of paper, valued at $1,750,200 per annum.

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The Starry Heavens.

AIR—"*Ye banks and braes.*"

[6-4 time]

How can'st thou spread so lovely far
Oh sky, thy jewel'd banner blue,
How can ye look, ye tiny stars,
So bright your azure curtains through?
Ah! many a breaking heart this hour
Is bleeding 'neath your silv'ry light,
Oh! stars, that calmly, gently rest,
Now gather'd by the wing of night.

How can'st thou roll so wondrous wide,
Oh! Earth, thy broider'd mantle green—
How can ye bleom, ye "scented flowers,"
On whose sweet bosoms dew-drops lean?
Full many a tear-dim eye this night
Is gazing on a seene so fair,
And fain would lay it down to sleep
Forever, flowers, beside you there.

O, sky, stars, earth and lovely flowers,
In whose embrace the star-beams sleep;
How calmly, sweetly, do ye rest,
While we poor mortals wake and weep!
Yet do we bless you, lovely things,
And learn from you a lesson rare—
When sorrow spreads her raven wings,
To bid our virtues shine more fair.

Summer is Coming.

Summer is coming—and with a glad shout
All nature is hanging her drapery out;
The forest and valley, the mountain and hill,
Are singing in concert with river and rill.
The bird in the tree-top, its mate in the glen,
And the winter-bound spirits of wearied men
Alike are rejoicing its coming to see,
As it throws its rich mantle o'er valley and lea.

Summer is coming—and like a rich vest
The earth in an emerald robe will be dressed;
All gem'd with bright flowers of various light,
From the deep scarlet dye, to the pure pearly white;
And the sky with its pale and cold mantle of blue,
Will deepen its tint of cerulean hue,
And its light floating cloudlets of silvery white,
Will seem to shed o'er us a smile of delight.

Summer is coming—and winter is o'er,
And the voices of nature awakened once more
In a murmuring strain of sweet harmony blend,
And upwards from earth a rich orison send—
The murmur of breezes, the songsters' wild notes,
The hum of the insects, which on the air floats,
And the voices of rivulets head everywhere,
Make vocal with music the earth and the air.

Beauty Everywhere.

Scenes of beauty meet our sight,
Every where our feet may stray,
There's beauty in the queen of night
And in the golden king of day.

There's beauty in the humblest flower
That spreads its petals to the beams;
There's beauty in the forest bower,
And beauty in the rushing streams.

There's beauty in the mountain tall
That rears aloft in regal form
Where the red bolts of tempest fall,
And write the language of the storm.

There's beauty in the glossy lake,
And in the ocean's solemn roar;
Whose cadences wild music make,
Hymning God's praise forevermore.

Beauty and grandeur ever meet
My eye, at noon, or evening dim;
In stars, or atoms 'neath my feet,
I see the awful might of Him,

In whose kind care we all exist,
Who bids the stars in order stand;
Who holds the winds within his fist,—
The waters in his mighty hand.

THE GREAT ECLIPSE.—Let no one about town forget to remember that a grand solar eclipse may be seen, free of charge, from the Battery, on Saturday the 25th inst., at 11 o'clock A. M., if the weather is fair; otherwise it may be seen on the first fair day in which the relative positions of the sun and moon happen to be favorable for the penomenon.

AN EXCELLENT IDEA.—A Western editor advertises for one thousand new subscribers who will pay in advance. This is truly an excellent plan for procuring subscribers, but we only wonder he did not advertise for two thousand while he was about it: it would have cost him nothing more for the advertisement.

TRIAL OF PATIENCE.—The Unicorn had a rather long and tedious passage, and much anxiety was felt for her save arrival. A Worcester paper states that an engine had stood constantly on the track, ready fired-up, for at least thirteen days and nights, waiting the arrival of that vessel, in order to forward the express bearing the news.

PADDY AHEAD YET.—An Irishman speaking of the excellent facilities of travelling in the ould country, averred that a man could not only travel from London to Brighton *cheaper* than he could stay at home, but "an faith it wouldn't take half so long to do it."

VERY IMPARTIAL.—The Louisville (Ky.) Impartial contains an advertisement of a gentleman who offers himself in matrimony to the young ladies of that vicinity, generally. He must be rather partial to the sex, nevertheless.

Conversation in a Carpenter's Shop.

Aaron Hand-saw.—Well, gentlemen, you may do as you please: but for my part, I am tired of these *ups and downs* of the world. The state of the times fairly sets my *teeth* on *edge*, and I am, for one, for *slitting asunder* the tyrannical fabric of oppression.

Benjamin Claw-hammer.—You're right Mr. Handsaw: we have been *handled* very roughly, and I am as ready to *strike* for a redress of grievances as any one: what say you friends?

Caleb Flat-file. On the subject of *rough* handling, Mr. Hammer; I defy any one of our company to produce more marked indication of *rough* management, than myself: and I presume my friend Saw will readily excuse the *harsh* treatment, which I have been compelled involuntarily to inflict on him; and with regard to our oppressors, my voice is, that we treat them as *roughly* as they have done us.

David Screw-auger. Gentlemen, you will always find me straight-forward in all my proceedings, with a little *winding* and *twisting* as occasion may require, and there is no two ways about it, but we must *bore* these tyrants till they are willing to do us justice.

Ephraim Fore-plain. I would be very sorry to display any ostentation, my respected friends, but having been, as you know, employed in commencing and preparing the way for the most delicate operations, it is no more than reasonable for me to expect to lead in this, as in every other important undertaking.

Francis Jointer.—My friend Fore-plain is right, and there is no one of our company whom I would so readily follow. Nevertheless, he will, I presume, readily admit his dependence on me, to straighten, correct and perfect his work, before it is considered valuable. In this I must claim the pre-eminence; and it is well known that none has so great a reputation for making *straight* work of whatever is undertaken as myself.

George Side-rule. Not quite so fast, if you please Mr. Jointer: your excellent ability in your line, no one will dispute with you; but remember who it is that lays out the limits of your operation, prescribing *bounds* and *extent.* But let that pass; we are to remember that we are assembled to discuss, not the point of excellence among ourselves, but the *length* and *breadth* of our grievances, and to adopt *measures* for relieving ourselves therefrom.

Henry Try-squre. We should at least examine the *angles* of this subject, and endeavor to detect, and if possible correct all irregularities; and as I have often been a guide to your proceedings I am certain you will admit the *uprightness* of my intentions in admonishing you to proceed to action.

Ichabod Grind-stone. My good friends, I for one feel *crank* at the prospect of a *revolution.* I am *keene grit* on this subject; and though I have often been compelled to *grind* the *face* of the *poor*, I am now resolved to *turn* and *sharpen* as much as possible, your sense of injury: and I hope none of you will feel dull on the occasion.

Joshua Bit-stock. Having been less dependent on the aid of neighbor Grindstone, than most of my fellows, I take this occasion to remark, that I have ever felt rather *crooked* about submitting to the many indignities which have been offered us; and I also have resolved to *turn* to the side of my compatriots and encourage a *revolution.*

Kimble Paring-gouge. We have long been subject to a system of *gouging*, that's a fact.

Luther Broad-axe. Lets *hew* down the system then.

Moses Gimblet, (in a squeaking voice.) Our bosthes be a great *bore*, no mistake; and we mustht all unite in thith *hole-y* cause.

Nathan Compassers. We shall *circumscribe* limits to this state of things.

Oliver Chalk-line. The sooner the quicker; I would *snap* at a chance of redress. for I have suffered the *longest* of any one.

Peter Mallet, (loud and uprorious.) Go ahead my chucks—for though you call me thick-*headed* I can see plainly we shall *beat* 'em all *smash.*

Quin Tool-chest. Come, come, gentlemen, this is a fatiguing subject, and you are evidently weary; please to take your berths and rest awhile, and in the morning you will be prepared for action. Now therefore I would beg leave to offer the following resolution:

"Resolved, that this august assembly is fully and abundantly sensible of its wrongs and grievances, and is fully determined to vindicate its rights as soon as it can be satisfactorily ascertained that the most proper and suitable time has arrived for making a general move in the premises."

(This resolve was immediately passed by acclamation, after which the meeting adjourned *sine die.*)
—*N. Y. Mechanic.*

EFFECT OF COLOR ON VEGETATION.—The fact has been fully established by the Royal Polytechnical Society of England, that the blue or violet rays of light are far more conducive to vegetation than other colored rays. If two pieces of colored glass, the one blue and the other yellow, are placed horizontally over a bed of earth in which seeds are sown, it will be seen that those under the blue glass, will spring up and grow in half the time, and with double the strength of those under the yellow or orange colors. The glasses, for this experiment, must not rest on the earth, but be supported an inch or more above the surface. We are not confident that the effect will be the same on all kinds of seeds, but if this should prove to be the case, it will be well to use blue glass in the sashes of green houses generally.

A SINGULAR ACCIDENT.—A boy, amusing himself with a bow and arrow, on Boston Common, last week, shot a pointed arrow into the air, so perfectly perpendicular that in its return it struck the boy on the head and penetrated the skull. His recovery is considered doubtful.

THE PROBLEM OF WEIGHTS. ANSWER.—The answer furnished by G. H. O., of Brooklyn, is correct, viz.: weights of s consist of 2, 3, 9, and 18. Ounces, 1, 3, 4, 8.

DIETZ'S IMPROVED HAMES.

Fig. 1.

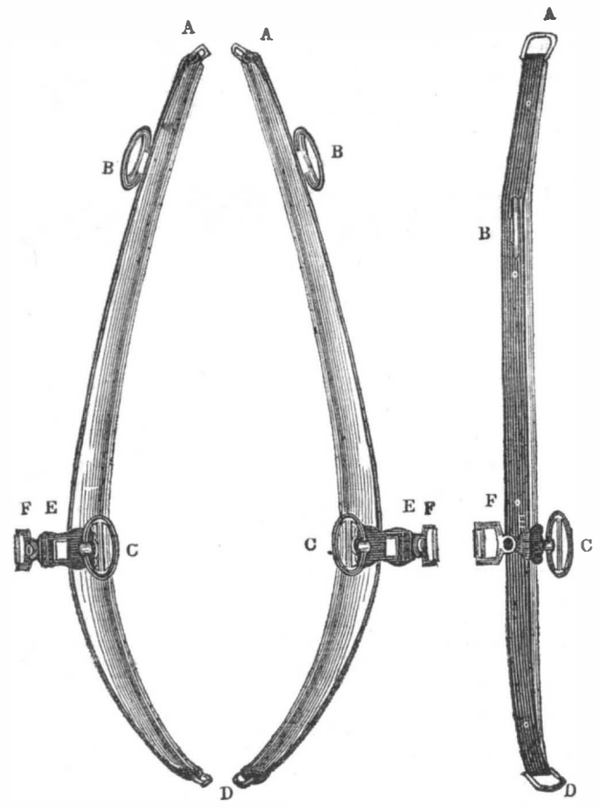

Fig. 2.

EXPLANATION.—This improvement, or combination of improvements, consists partly in the form of the hame, and partly in the iron appendages. The hames are generally constructed of wood, though the same improvements may be attached to iron hames. Fig. 1 shows a front view of a pair of hames with the improvements: fig. 2 is a side view. A strip of iron extends from A to D, terminating in loops as usual. The rein guides, B, are connected to the hames by moveable joints, by which the guide has liberty to move horizontally: and has the form of a complete circle or oval outside of the joint, to preserve the rein from wear. A finger, or draught iron, is attached by an eye-bolt to the front of the hame, and has a hinge joint (finger joint) at E: and to the end of the finger is attached, by a rivet, a draught loop F, which, by means of these two joints, has liberty to move either vertically or horizontally. To the eye-bolt is connected the breast-ring, C, which has a moveable bar across its centre. This breast-ring bar has a curved cross at each end, and in the outward edge of each cross is a hollow groove, fitted to the interior of the breast-ring, in a manner to allow the bar to move circularly within the ring, while it can not be detached therefrom. This bar is to prevent the chafing or wear of the breast-strap. The top and bottom of the hame are bent forward, for the purpose of avoiding the pressure of the shoulder-blade, or the withers of the horse, against the collar. These improvement were invented by Andrew Dietz, of Middletown, N. Y., who has entered a caveat and taken measures for securing a patent therefor.

For the Scientific American.

NEW BEDFORD, Mass., April 11, 1846.

Mr. Porter,—Sir: I read the Scientific American with great pleasure, every week. Had such a paper been in my hands in my youth, I fully believe it would have led to an entirely different destiny in my affairs. In my childhood I was always wrapped in dreamy visions of some sort of machinery. Every kind of labor was by me reduced to a method, and performed by the agency of a machine, of which a clear vision of a working mould was always present, to my imagination. I erected trip-hammers and water wheels in profusion: my jacknife and plenty of straight-grained pine-sticks were the only playmates sought for. Alone, in the wood-house loft were spent my happiest hours. I had a great aversion to the axe or hoe handle, or any kindred employment. My delight was to be in the card factory and see the operations of the machinery: the card-tooth and setting machine was my wonderment; but even then I thought I could make one. My parents being poor, they required all the aid of a child's hand in helping on and keeping up the supplies of subsistence; and when I sometimes stole slily away from my task, and crept out of sight to enjoy a dream or vision of some apparatus which might perform for me the task just left, and waiting for me to finish, I would be so intent upon it, that I would get surprised and soundly rated for being lazy. If I ventured to explain, and mentioned the occupation of my mind, I was called a fool, and sent back to my labor with a sound box on the ear.

Again I say if a paper like yours or something of the kind had been accessible, whereby I could have seen and understood what was going on in the world, and could have realized what was being actually accomplished in the very line, of all others, most dear to my soul, it would have altered my destiny. It would have stimulated me to carry out—to bring to some tangible form, some of those things which dwelt in and almost wholly occupied my brain, and which seemed so simple that it appeared a wonder that somebody didn't make one. Many a machine have I, in the course of my life, seen in operation, which, at some previous period, had been an occupant of my own thoughts, in nearly the self-same form, and which, had my early propensity been enlightenened by such and similar papers as yours or the habit of seeing and reading of such things been familiar, I should have dared to mention it without the certainty of being called fool—and perhaps have been successful in creating the model myself.

Thus is such a paper destined to do good; placing it in the hands of men and youth, it shews them what is actually going forward, and will encourage them, if they have the germ, to come forward and cultivate it, and eventually take rank amongst the great; for such I deem those who do most to promote the well-being of their age; and who does more than the ingenious *inventors?*

Yours truly, A SUBSCRIBER.

ICE.—An Albany paper recommends the establishment of the ice business in that vicinity, and thinks that Albanians might compete with the Bostonians in that business. They might gather the raw material, but probably would not understand *curing* it quite so well as the Yankees.

EXTRAORDINARY SHOOTING.—Mr. B. Mills, gunsmith, of Harrodsburg, Ky., with a rifle of his own make, running 100 to the pound, made ten shots at a target 14 by 16 inches, and hit it eight times out of ten, at a distance of 400 yards. The distance Mr. Mills shot was just 40 yards short of a quarter of a mile.

CHILDREN'S CLOTHING.—It is remarked in the Water Cure Journal, that the clothing ordinarily used for infants' clothing is far too complicated, and that many an infant is severely injuired by being dressed too tight; and even intimates that it is barbarous and cruel in mothers, thus to cramp and deform their posterity, &c. But how inconsiderate must that writer be, to suppose that such trivial considerations as the health and form of children should bear any weight in comparison with that of conforming to the fashion. No, no; modern mothers are not so dull as to forego the fashion of the "first families," and neglect to dress their children like those of the first class in Paris, merely for the sake of those old-fashioned commodities,—health and natural beauty:—not they. These things may be regarded by the wives of farmers or careless mechanics; but they are beneath the serious consideration of fashionable ladies, especially in cities.

DAVIS'S MANUAL OF MAGNETISM.—We are confident in saying that there has never yet been published, either in this country or in Europe, a work so illustrative and comprehensive, and which, in so few pages, gives so perfect an exposition of electricity, magnetism, electro magnetism, and magneto electricity, as the Manual of Magnetism, published by Daniel Davis, Jr. 428 Washington street, Boston. The author is a practical philosopher and mechanic, being a manufacturer of philosophical apparatus, and having the advantage of a lively genius, has combined in this work the result of his own practical observation, with the discoveries of Professors Page, Henry, and others. This book contains 220 pages, and 116 engravings. We have a few copies on hand, and for sale at this office:—price 75 cents.

GURNEY'S DAGUERREOTYPES.—We should probably rather injure Mr. Gurney than otherwise, by stating to our readers, that his portraits are unequalled by any thing of the kind in New York; for although that is near the fact, he appears to have quite as much business, and as many customers calling, as is consistent with his convenience. It will do no harm to drop in and see his specimens, however, at 180 Broadway, on some morning before his rooms become crowded.

THE IMPARTIAL.—We receive regularly a beautiful daily paper, under the above title, published at Louisville, Ky., by an association of practical printers. It is on a good sized sheet for a daily, and presents a variety of brief spicy articles which never fail to make a paper interesting.

LONDON LITERATURE.—In a window in the White Horse yard, Drury Lane, may be seen a bill, announcing that "karpets is beet and mezzages tended to by the person in the kitchen. In Margaret street a board informs us that "noates and letters is punkully delivered, and herrands dun." Mr. G. Thomas, of Drummond street, informs his friends and the world, that he "rites petishuns and lethers, on the shortest notis," and Miss Augustus Kennedy, of the same locality, takes in to "hedukate in sowing and reeding." It woud bee wal for sum of these Lundiners to go to Horigon, to hobtain a hedicashun hin horthogrifey and helicushun.

HONORABLE.—A gentleman in Boston, the other day, finding among his papers a rather ancient note against a man, in a distant city, remitted it to him, saying that he might return anything or nothing, as he thought right. The maker, being thus in possession of the note, promptly remitted to his old benefactor a sum which was perfectly satisfactory.

FAITH OF THE INDIANS.—If the following account given by Catlin, of the faith of some of the Western tribes of Indians, is correct, it goes far to prove that they retain traditionary superstitions, derived at some former period from the Romans or Roman Catholics. An old chief thus describes it:

"Our people all believe that the spirit lives in a future state; that it has to pass a dreadful deep and rapid stream which is hemmed on all sides by high and rugged hills—over the stream, from hill to hill, there is a long and slippery pine log, with the bark peeled off, over which the dead have to pass to the delightful hunting grounds. On the other side of the stream, there are six persons on the good hunting grounds, with rocks in their hands, which they throw at them all, when they are on the middle o the log. The good walk safely to the good hunting grounds, where there is one continual day; where the trees are always green; where the sky has no clouds;—where there are fine and continual breezes; where there is one continual scene of feasting, dancing and rejoicing; where there is no pain and trouble, and people never grow old, but forever live and enjoy the youthful pleasures. The wicked when they see the stones coming, try to dodge, by which they fall from the log, and go down thousands of feet to the water, which is dashing over the rocks, and is stinking with dead fish and animals, where they are carried around and brought continually back to the same place in whirlpools, where the trees are all dead, and the waters are full of toads, lizards and snakes; where the lost are always sick, and never die;—where the wicked are continually climbing up by thousands on the side of the high rock, from which they can overlook the beautiful country of the good hunting grounds, the place of the happy, but can nevr reach it."

THE ROMAN CATHOLIC FAITH.—A small book, called the Catholic Manual has been lately published under the authority of the Roman Catholics at Calcutta, consisting in part of a catechism which explains, in a brief manner, the principles taught by that sect. We shall add no comments: our readers may compare it with their bibles, and judge for themselves. We suppose our Catholic friends will have no objections to the publication of extracts from their own books.

Question. What is the penance?

Answer. A sacrament by which all actual sin is destroyed.

Q. By whose authority is sin forgiven?

A. By the authority which Jesus Christ has given to his church.

Q. How is sin expatiated in penance?

A. By means of full confession.

Q. What must one do after committing a mortal sin?

A. Make an expiation by confession.

Q. What is the use of confession?

A. Thereby a man, after committing a sin, obtains the favor of God in this world, and goes to heaven in the next.

Q. Where do those go who die with their venial sins unforgiven?

A. They go to purgatory, where they are for a time punished for their venial sins, and then go to heaven.

Q. Can those who are in purgatory be benefitted by our prayers?

A. Yes: for being like the children of God, and within his church, they are within the pale of the communion of the saints.

Q. What is the use of the sign of the cross?

A. To sanctify us, and to remind us of the chief articles of religion.

Q. What are festivals?

A. All those days which the Church has appointed to be kept equally holy as the Lord's day, &c.

THE CHRISTIAN'S CONFIDENCE.—How apt are we to misconstrue the Spirit of God to our own disadvantage! While the blessed apostle bids us to "work out" our "salvation with fear and trembling," he doth not bid us to work it out with doubt and distrust. It is the Psalmist's charge, that we should "serve the Lord with fear, and rejoice in him with trembling:" so there is a fear without diffidence, and a trembling that may consist with joy. Trembling is an effect of fear; but this fear which we must affect is reverential, not slavish, not distrustful. Indeed, when we look upon ourselves, and consider our own frailties and corruptions, and God's infinite justice, we have too just cause of doubt and dejection, yea, were it not for better helps, of utter despair; but when we cast up our eyes to the power of him that hath undertaken for us, and the faithfulness of him that hath promised, and the sure mercies of him that hath promised, and the sure mercies of him that hath begun his good work in us, we can fear with confidence, and rejoice in our trembling.—*Selected.*

"I MARK ONLY THE HOURS THAT SHINE."—The above, if we righly remember, is the inscription upon a sun dial in Italy. It inculcates a beautiful lesson which too many are prone to disregard. It would teach us to remember the bright days of life, and not to forget the blessings God is giving us. Life, it is true, is not all bright and beautiful. But still it has its lights as well as its shades, and it is neither wise nor grateful to dwell too much upon the darker portions of the picture.—*Ib.*

WHAT QUEER RELIGION.—The Indiana Freeman says, that at a recent revival in the M. E. Church, at Marion, O., the usual invitation was given for mourners to go to the altar and be prayed for. Among those who went forward, was a colored woman—but neither priests, nor the church members, nor even the penitent seekers of religion could bear the presence of a colored woman, and she was thrust from the altar. We doubt whether such rank prejudice of color could be found in Georgia, or any other Southern State.

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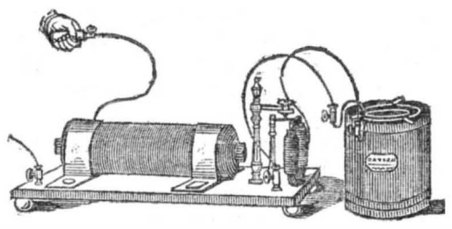

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PHRENOLOGY.

PROSPECTUS OF VOLUME IX., FOR 1847,
OF THE
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O. S. FOWLER—Editor.

To reform and perfect Man—to develope, by culture, the original beauties and capabilities of his nature—is a work the most arduous and exalted that can possibly engage human intellect or effort. To do this effectually, however, his nature must be known; and since Phrenology and Physiology imbody his entire constitution, there is no way by which we can so easily become acquainted with ourselves, or for what occupation in life we are best qualified, as by the aid of these sciences.
To these subjects, and their various applications will this Journal be devoted. It will present,

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To know and obey those laws of life and health, unfolded by these sciences, constitutes the main basis and superstructure of talent, virtue, and happiness. This department will also be illustrated by engravings.

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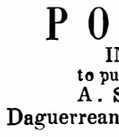
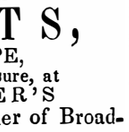


TEETH.



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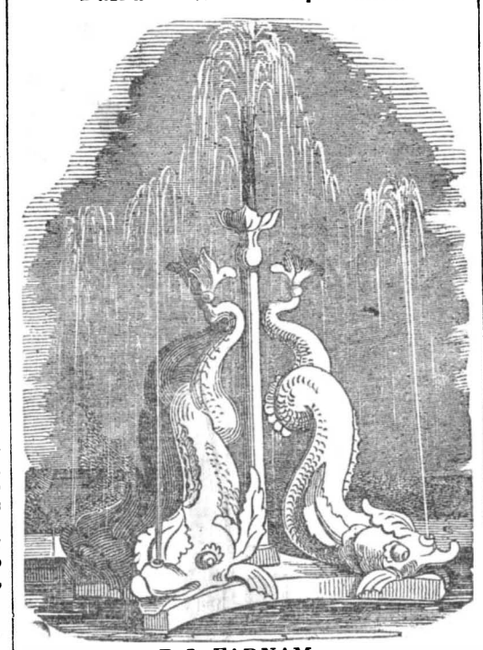

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AND STEEL LETTER CUTTER
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Name-Stamps for Blacksmiths, Stone Cutters, Carpenters and machinists, steel letters and figures of all sizes constantly on hand for marking iron, steel, brass and wood; Notary seals, desk seals, door plates made and engraved; artificial flower stamps, vainers and loofers made at the shortest notice and on most reasonable terms feb11.

State Convention.

State of New York, ss.—We, the Secretary of State, the Comptroller, and the Treasurer of the said State, having formed a Board of State Canvassers, and having, in conformity to the provisions of the act entitled "An act recommending a Convention of the People of the State," passed May 13, 1845, canvassed and estimated the whole number of votes or ballots given for and against the said proposed "Convention" at a General Election, held in the said State on the fourth day of November, in the year 1845, according to the certified statements of the said votes or ballots received by the Secretary of State in the manner directed by the said act, do hereby *determine, declare,* and *certify,* that the whole number of votes or ballots given under, and by virtue of the said act, was two hundred and forty-seven thousand, one hundred and seventeen; that of the said number, two hundred and thirteen thousand, two hundred and fifty-seven votes or ballots were given for the said Convention: That of the said first mentioned number, thirty-three thousand, eight hundred and sixty votes or ballots were given against the said Convention: And it appearing "by the said canvass that a majority of the votes or ballots given as aforesaid, are for a Convention," the said canvassers do farther *certify* and *declare,* that a Convention of the People of the said State will be called accordingly; and that an election for Delegatas to the said Convention will be held on the last Tuesday of April, in the year 1846, to meet in Convention at the Capitol in the City of Albany, on the first Monday in June, 1846, pursuant to the provisions of the aforesaid act of the Legislature.
Given under our hands, at the Secretary of State's Office, in the City of Albany, the twenty-sixth day of November in the year of our Lord one thousand eight hundred and forty-five.

N. S. BENTON, Secretary of State.
A. C. FLAGG, Comptroller.
BENJ. ENOS, Treasurer.

State of New York, Secretary's Office.—I certify the preceding to be a true copy of an original certificate of the Board of State Canvassers on file in this office.
Given under my hand and seal of office, at the City of Albany, the twenty-sixth day of November, in the year of our Lord one thousand eight hundred and forty-five.

N. S. BENTON, Secretary of State.

State of New York, Secretary's Office,
Albany, January 28th, 1846.

To the Sheriff of the County of New York—*Sir:*—Notice is hereby given, that pursuant to the provisions of the act entitled "An act recommending a Convention of the People of this State, passed May 13, 1845, an election will be held on the last Tuesday of April next, in the several cities and counties of this State, to choose Delegates to the Convention to be held pursuant to the provisions of the aforesaid act and the certificate above recited.
The number of Delegates to be chosen in the County of New York will be the same as the number of Members of Assembly from the said county.
Respectfully yours,
N. S. BENTON, Secretary of State.

Sheriff's Office, New York, February 7, 1846.
The above is published pursuant to the notice of the Secretary of State, and the requirements of the statute in such case made and provided for. WM. JONES,
Sheriff of the City and County of New York.
☞ All the public newspapers in the county will publish the above once in each week until election, and then hand in their bills for advertising the same, so that they may be laid before the Board of Supervisors and passed for payment.
See Revised Statutes, vol. I, chap. vi., title 3d, article 3d—part 1st, page 140. march 18 t E.

JOHNSON'S
DINING SALOON,

No. 144 FULTON STREET.
(Near Broadway): New York.

BILL OF FARE.

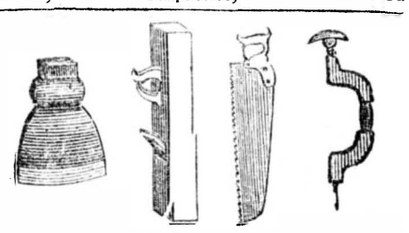
Roast Turkey,	18d	Boiled Ham,	6d
" Goose,	18d	Pork and Beans,	6d
" Chicken,	18d	Veal Pie,	6d
" Duck,	18d	Beef Steak Pie,	6d
" Beef,	6d	Chicken Pie,	12d
" Pork,	6d	Mush and Milk,	6d
" Veal,	6d	Rice and Milk,	6d
" Lamb,	6d	Lamb Pot Pie,	6d
" Pig,	12d	Fried Fish,	6d
Boiled Chicken,	12d	Fried Clams,	6d
" Mutton,	6d	Ham and Eggs,	12d
" Corned Beef,	6d	Chicken Soup,	6d
" Pork,	6d	Beef Soup,	6d
" Fish,	6d	Coffee,	6d

Dessert.

Suet Pudding	6d	Mince Pie,	6d
Indian Pudding,	6d	Apple Pie,	6d
Rice Pudding,	6d	Peach Pie,	6d
Plum Pudding,	6d	lum Pie,	6d
Bread Pudding,	6d	u mpkin Pie,	6d
Apple Dumplings,	6d	Custard Pie,	6d

Breakfast and Tea.

Beef Steak,	6d	Hot Corn Bread,	6d
Veal Pie,	6d	Indian Cakes,	6d
Mutton Chops,	6d	Boiled Eggs,	6d
Ham and Eggs,	12d	Fried Eggs,	6d
Fried Tripe,	6d	Toast,	6d
Fried Sausages,	6d	Hot Muffins,	6d
Fried Fish,	6d	Hot Rolls,	6d
Fried Clams,	6d	Tea,	3d
Fried Liver,	6d	Coffee,	3d



AT HENRY ROWNTREE'S old established *Tool Store,* at the Corner of Chambers and Chatham streets, Mechanics, Farmers, &c., will find an assortment of good Tools, suitable for almost every branch of trade.
H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.
H. R. has a greater part of his goods made expressly for him, and Mechanics, &c., may place confidence in them, having had the gold medal awarded him, at the late Fair, for the best tools.
First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.
☞ Remember, at the corner of Chambers and Chatham streets. dec26

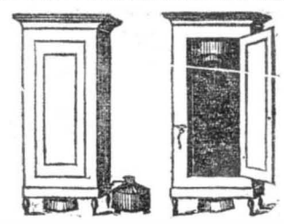
W. N. SEYMOUR & Co.

IMPORTERS AND DEALERS,
AT THE
Old Established Hardware and Tool Store,
No. 4 *Chatham Square,*
(at the Foot of the Bowery, N.Y.)

HAVE the greatest assortment of Hardware for builders; Mechanics' tools of all descriptions.
Wm. Graves & Sons' warranted cast steel files & tools.
Worrall's warranted cast steel saws.
Hoe & Co.'s do. do. do.
Cabinet Trimmings. Tin and wooden ware.
House-keeping articles of great variety.
Agricultural tools. Patent Safety Fuse for blasting.
Sole Agents, for this city, for J. A. Fay's patent Mortising Machine.

THE INVISIBLE DOOR SPRING.

W. N. S. & Co. have taken the exclusive agency, for this city, of Ellis's Invisible Door Spring, which commands a ready preference over all others, and has made arrangements to have them put on and adjusted to the doors of those who may require them; Mr. Shaffer, 75 Warren st, is engaged to superintend this department, and will promptly attend to all orders in this line.
Dec. 25.



Locke's Portable Shower Bath.

THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the id of servants, and withodt having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st.
JOHN LOCKE.
Dec 4.

ILLUSTRATED BOTANY.
Edited by JOHN B. NEWMAN, M. D.

Circumstances make the man, and very often, as in the present case, the book. For years there has been a steadily increasing interest felt for the vegetable kingdom. Latterly this taste has been partially gratified by the literary magazines, which owe their popularity, in a great measure to the beautiful flower prints that adorn them. One specimen a month, however, is not enough, nor is it required in such connection. A work relating exclusively to the subject, is wanted by the public, and this want, the present enterprise is intended to supply.
Preceded by a short introduction on Physiology, and a view of the Natural and Linnæan Systems, the work will be devoted to a separate consideration of each plant.—Together with our own information, we shall draw on the standard works on Chemistry, Botany, and Medicine, combining every useful item of knowledge, and without lessening its value, present it in a concise and pleasing form. Obtaining our supplies from the same sources as the bee, we hope to *secrete* as elegant a sweet for the mind, as it does for the body. The properties of each, more especially the medicinal, will be confirmed, in a great number of instances, by personal experience. To this will be added its history; its meaning in the language of flowers; and poetry, either original or selected from the gems of the children of song.
The whole illustrated by splendid colored engravings, taken from nature. full size, and finished in the highest style of modern art.
This work is designed to be eminently popular in its application, and there is enough of that which is stronger than fiction about it, to render it, in no ordinary degree, interesting and instructive.
Terms.—This work will be published monthly, with four or six flowers, handsomely painted, in each number. Price three dollars a year, or two copies sent to one address for five dollars. A *very* liberal discount allowed to agents.
J. K. WELLMAN,
Publisher and proprietor, 118 Nassau st.
*** Furnished to Seminaries, Colleges, and societies, in clubs, 10 copies for $20 a-year.

PARTICULAR NOTICE.

We do not intend to confine ourselves to the botanical descriptions of each plant, but on the contrary, divested of technicality, intend to make it a thoroughly scientific work, in all the departments of Botany. It will also give information on the cultivation of Plants and Flowers. In a word, it will comprise the whole science.
We give below the *free* opinions of the press.

From the N.Y. Tribune.

"Illustrated Botany."—This is a new candidate for popular favor, in the shape of a monthly periodical. The first two numbers are before us, and if they may be regarded as speeimens of those which are to follow, the work will certainly prove highly attractive. It is to be devoted to a separate consideration of each plant in the vegetable kingdom, the whole illustrated by colored engravings, taken from nature, full size, and finished in the highest style of modern art. Four or six of these engravings will be given in each number. Those in the numbers already issued are of the most beautiful and splendid description. The Editor will draw on the standard works on chemistry, botany, and medicine, and thus combine in a brief form every useful item of knowledge respecting plants and flowers, their medicinal qualities, &c. To this will be added their history and their meaning in the "language of flowers." To all lovers of the beautiful in Nature and Art, we commend this work as eminently worthy of patronage.

From the Christian Advocate and Journal, (Edited by T. E. Bond, M. D,)

The painted specimens are really exquisitely done; and the great marvel with us is, how the work can be afforded at the low price of three dollars per annum, or two copies to an address for five dollars. Engravings can be cheaply multiplied, but paintings must be executed separately, and without the aid of labor-saving machinery. It will give us real pleasure to announce the successive numbers of this beautiful periodical, as we have been led to think the study of Botany not only as an innocent recreation, but eminently promotive of piety.

From the N. Y. Surgical and Medical Reporter.

We have received the first number of "The Illustrated Botany." This periodical is got up in a very neat form, and displays taste and judgment in its Editor, who, being a well educated medical man, is prepared to make a work of this kind very interesting and useful to the general reader. The colored plates are unsurpassed in beauty and finish.

From the Protestant Churchman (N. Y.)

Illustrated Botany.—The design of this work is admirable. It is intended to comprise scientific descriptions of the most valuable native and exotic plants, with their history, medicinal properties, &c. &c.
N. B. Publishers of newspapers who give the above prospectus three insertions, shall receive the work one year. march 26.

ADAMS & Co.'S
GREAT EASTERN, SOUTHERN, AND WESTERN
Daily package Express.

ADAMS & CO. respectfully give notice that their arrangements for their various Expresses have been perfected with the greatest care, and enable them to forward, with the utmost security and rapidity, and at moderate rates, Merchandize of every description.
Our Agents in these several Cities pay particular attention to the collection and payment of Notes, Drafts, Bills, &c., and all other business appertaining to our Express.
In connexion with Messrs. Wilmer & Smith, of Liverpool, we have established an European Express, similar in its design and operation to our American Express, and alike beneficial to the Merchants and Importers of both countries. Custom House business promptly attended to.
Express for the South and West leaves the Office daily, at 1-4 to 3, and half past 4 P.M.
Express for the East at 1-4 to 5 P. M.
Merchants and others will bear in mind, we run the only Express Cars between New York and Baltimore.
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of Machinery, Landscapes, Plans of every description for newspapers, book embellishments, &c. &c., in good style, and at short notice, at 89 Nassau street, in the
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and adjoining the office of the Scientific American.
marsh 26. A. R. HAIGHT.

ALEX. MACDONALD; PRINTER.

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